

REMARKS

Claims 51-70 were pending at the time of the Office Action of 4 September 2007. All were rejected. In the above amendments, claims 51-59 are still pending, as are claims 68-70. New claims 71-80 are presented. As a result, there are 3 independent and 22 total claims pending, which is lower than the number previously paid for, so no excess claim fee is due.

Applicant also acknowledges the Examiner's further comments in the advisory action mailed 11 January 2008.

Attorney of record

Applicant respectfully notes for the record that this response is being filed by an attorney and firm that are not of record in the case, but the filing is made at the authorization and request of the attorney of record. No associate power of attorney is filed, due to the elimination of the practice as of 25 June 2004. MPEP § 402.02.

Correspondence should still be directed to the attorney of record.

Claim amendments

Claims 51, 52, 59, 68 and 70 are amended. New claims 71-80 are presented.

Independent claim 51 is amended in several ways. First, a limitation to the "cultivator frame" is removed, as it is not believed to be needed for distinguishing the prior art. Further, the coulter wheel assemblies are required to be "individually" mounted to the frame using the mounting means, and they are required to be "laterally spaced apart from adjacent coulter wheel assemblies in order to reduce plugging of crop residue between the coulter wheels." Support for these amendment is found in the drawings and at paragraph [0017] of the specification. The removed limitation regarding the cultivator frame is presented in new claim 72.

Claim 52 is amended by removing the latter of two limitations it presents ("able to deflect upwardly about a horizontal axis in response to impact with an obstacle"). The removed limitation is presented in new claim 71.

Claim 53 is amended to require a "corresponding" spring element for each coulter wheel. A limitation further describing the spring element is removed and presented in new claim 80.

The dependency of claim 54 is changed from claim 53 to claim 80.

Claim 59 is amended to require “the implement” to further comprise removable individual field working tools, rather than “each row.”

Independent claim 68 is amended by removing a reference to claim 51. It is also amended by amending the limitation related to the set of instructions.

Independent claim 70 is amended in several ways. First, the “cultivator frame” has a limitation (“having longitudinally spaced apart transverse cross members”) removed, broadening the claim. Further, the “mounting means” is amended to require a mounting means “corresponding to each individual coulter wheel assembly.” Last, the step for mounting the coulter wheel assemblies is amended to require that “each coulter wheel assembly” is mounted to the frame using the mounting means “laterally spaced apart from adjacent coulter wheel assemblies in order to reduce plugging of crop residue between the coulter wheels.” Support is found at paragraph [0017].

New claim 74 presents language previously found in claim 63.

New claim 75 presents language previously found in claim 51.

New claim 76 presents language previously found in claims 59 and 60.

New claim 77 presents language previously found in claim 65.

New claim 78 presents language previously found in claim 66.

New claim 79 is new language in the claims, but finds support at paragraph [0019] of the specification.

Declarations in support of patentability

In support of its arguments for patentability, applicant encloses, and makes a part hereof, the declarations of Horst G. Bohner (“Bohner”) and James F. Boak (“Boak”).

The Bohner declaration is made by a non-affiliated third-party for the purpose of introducing a report issued in 2006 by the Ontario Ministry of Agriculture, Food and Rural Affairs to the examination. The report itself is not prior art, but the report, and Mr. Bohner's comments as its author, speak loudly as to the secondary considerations of unexpected results and the level of advancement in the field that is considered inventive.

The Boak declaration is made by one of the inventors in the application. It speaks to the combination of the Dietrich '068 and McFarlane '525 references, as well as the commercial success of the present invention.

The Examiner is requested to properly consider the declarations in the further examination.

Claim rejections – 35 USC 103

Claims 51 and 62-70 were rejected as obvious over the combination of US Pat 6,896,068 to Dietrich ("Dietrich '068") and US Pat 6,698,525 to McFarlane ("McFarlane '525").

Claims 52-55 were rejected as obvious over the combination of Dietrich '068 and McFarlane '525 as applied to claim 51, with the further addition of US Pat 6,412,571 to McIlhargey ("McIlhargey '571").

Claims 56-58 were rejected as obvious over the combination of Dietrich '068 and McFarlane '525 as applied to claim 51, with the further addition of US Pat 5,462,124 to Rawson ("Rawson '124").

Claims 59-61 were rejected as obvious over the combination of Dietrich '068 and McFarlane '525 as applied to claim 51, with the further addition of US Pat 6,802,270 to McMahon ("McMahon '270").

Applicant traverses all of these rejections. Most particularly, the applicant traverses the combination of Dietrich '068 with McFarlane '525. Without that combination, independent claims 51, 68 and 70 are allowable and all of the dependent claims are allowable as proper dependent claims. Further, the new claims are also allowable as proper dependent claims.

The applicant respectfully directs attention to the Boak declaration, where it is noted that a product having that combination is actually sold by the applicant and is identified by them as the "Salford 499 and 699 disc cultivator." Boak, item 8. While this product provides an operative combination, the combination has deficiencies, including the tools work the soil too deeply, forming a secondary density layer in the seed germination zone. The secondary density layer is not a desired result, as it unfavorably alters root growth and development. Boak, item 9. The invention as claimed, which is referred to by Boak as the "RTS" (Residue Tillage Specialist), does not form a

secondary density layer. Boak, item 9. Significant commercial sales success has been achieved by the RTS with respect to the 499 and 699 disc cultivator. Boak, item 20.

In making this declaration and in reviewing claim 51 as previously presented, applicant notes that McFarlane '525 only shows coulter wheels mounted on a gang shaft as a "coulter wheel assembly." McFarlane does not show individually mounted coulter wheels.

Applicant does not agree with the Examiner's assertion that coulter wheel assemblies, and, much less, individual coulter wheels, were known equivalents to the S-tines of Dietrich '068. In fact, at the time individually mounted coulter wheels were only used in connection with planting equipment, not tillage equipment. The gang shaft coulter wheel assembly of McFarlane '525 was the state of the art for tillage equipment. In addition to the Boak declaration, this issue is addressed in the "Background" section of the specification as filed.

Further, gang shaft mounted coulter wheel assemblies as known in the prior art are known for their tendency to plug with crop residue, cover crop materials, weeds and soil, especially in wet soil. Boak, item 11, and the "Background" section of the specification as filed, paragraph [0009]. By replacing gang shaft coulter wheel assemblies with individually mounted coulter wheels, applicant is able to surprisingly and unexpectedly solve the problem of plugging. Boak, items 12, 13.

Also, the "simple" replacement of the S-tines of Dietrich '068 with the ganged coulter wheels of McFarlane '525 would result in loss of accuracy in the penetration depth of the individual coulter wheels. The use of individually-mounted coulter wheels allows shallow tillage for seed bed preparation down to as low as 1 inch below the surface, a depth that is actually less than planting depth, and which is very counter-intuitive. Boak, item 10.

Another feature of an individually-mounted coulter wheel that is not possible in a gang-mounted system is the ability of the wheel to pivot. A gang-mounted coulter assembly is attached to the implement at the ends of the assembly, that is, in at least two points. Boak, item 15.

The present invention has been independently field tested, as demonstrated by the 2006 publication entitled "Advancing No-till Soybean Production", published online

by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and the Heartland Regional Soil and Crop Improvement Association at www.ontariosoilcrop.org/User/Docs/Grant-Reports/Soys1.Heartland.pdf. The article is authenticated by the enclosed declaration of Horst G. Bohner.

Conclusion

The Applicant respectfully submits that the present application is now in condition for allowance and such action is earnestly requested.

Respectfully submitted,

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